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News Release

DSTA PARTNERS UNIVERSITY OF PENNSYLVANIA'S GRASP LAB TO ADVANCE INNOVATION IN MULTI-ROBOT SYSTEMS

Singapore's Defence Science and Technology Agency (DSTA) has announced a partnership with the University of Pennsylvania's General Robotics, Automation, Sensing and Perception (GRASP) Laboratory to advance innovation in multi-robot systems.

Present-day multi-robot systems, which involve a group of robots working as a team to accomplish tasks, rely on stable communication to plan, coordinate and execute their missions. Dynamic and complex environments such as urban landscapes can disrupt critical cross-robot communication. This collaboration aims to develop resilient autonomy techniques, enabling diverse robot teams to successfully complete missions in such environments.

With the increased deployment of multi-robot systems, tasking and managing these heterogeneous systems imposes a high cognitive load on human operators. To ease this burden, the partnership will also research and develop edge-optimised agentic AI solutions capable of autonomously translating high-level human objectives and goals into human-approved task plans onboard the robotics platforms. This will enable human operators to supervise missions more effectively, safely and efficiently.

"Intelligent orchestration of unmanned platforms under realistic conditions will enable a significant leap in how complex operations can be conducted. This joint initiative with GRASP Lab bridges advanced research and field-ready capability. It will see our engineers working alongside leading researchers, deepen our in-house expertise and accelerate the development of technologies to deploy unmanned platforms at scale for

MINDEF/SAF,” said DSTA’s Deputy Chief Executive (Operations), Mr Loke Mun Kwong.

GRASP Faculty Director CJ Taylor said, “We’re very aligned in that we are both very forward-looking organisations. This gives us a chance to work on technologies that are going to be impactful and gives us a chance to shape them for the benefit of humanity in general”.

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About Defence Science and Technology Agency

The Defence Science and Technology Agency (DSTA) is a leading technology organisation that drives innovation and delivers state-of-the-art capabilities to make the Singapore Armed Forces a formidable fighting force. Harnessing and exploiting science and technology, our engineers and IT professionals leverage multidisciplinary expertise to equip our soldiers with advanced systems to defend Singapore. DSTA also contributes its technological expertise to support national-level developments. To achieve our mission, DSTA excels in systems engineering, digitalised platforms, cyber, software development and more.

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